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## Rail Transport in NATO's Logistics System: The Case of Poland

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**Abstract:**

**Purpose:** The aim of the article is to analyse the possibilities of domestic rail transport in the field of military transport, as well as to identify factors influencing the organization and efficiency of the transport process.

**Design/Approach:** The research was conducted using qualitative methods. The period from 2014 to 2019 was subjected to a detailed analysis. As part of the research procedure, process analysis was carried out using the method of multiple case study.

**Findings:** The results of the study indicate that there is a visible increase in the number of foreign forces military transports by rail. The rapid movement of military cargo by rail is currently hampered by a number of physical, legal and regulatory barriers. The poor condition of road infrastructure especially in Eastern Europe and legal barriers to the movement of oversize loads by road necessitate the use of mass rail transport. Many civilian entities are involved in the organization of the transport process.

**Practical Implications:** The research results can be used to improve the organization of the rail transport process in the armed forces.

**Originality/Value:** The conducted research revealed several problems and challenges in the field of transport organization. According to the case studies presented despite of all steps taken by both military commands and civilian institutions there is a still room for improvements in the area of transport system optimizing. Detailed conclusions and comments contained in the article may be used to improve the applicable transport procedures.

**Keywords:** Rail transport, military logistics, logistics system, fleet management.

**JEL codes:** H54, H56, L92, R42.

**Paper type:** Research article.

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## 1. Introduction

Rail transport made his debut on the battlefield for the first time during the American Civil War (1861-1865). Thanks to the relatively high speed and cargo capacity, it provided efficient movement of large armies over long distances. Rail increased speed of transportation to about 10-15 mph and distance to the length of available tracks. Typical 15-car train travelled about five times faster than team of six mules drawing a wagon carrying 1.5 tons of supplies (Gabel, 1997). The Prussians sent military observers who were attached to the Union Army, and the railway aspects of the conflict were carefully studied in Prussia and other German states (Sibul, 2011). In Europe it was used on a mass scale in the Franco-Prussian War (1870-1871). During subsequent world conflicts, this form of transport dominated the functioning of armies in the sphere of military logistics.

In addition to main tasks, it was also used as a weapon in the form of armoured trains. The advantage of rail transport began to disappear along with the intensive development of road transport, especially after First World War. The accumulated resources and executive potential ceased to be needed, and many military railway units were disbanded. The engineering units took over the role of the railway troops. Many armies have reduced their rolling stock and rail infrastructure to a minimum. Rail transport services for the army were carried out incidentally by commercial carriers mainly. This trend was visible in many countries, including Poland. Rail transport is essential for the deployment of oversized and overweight military equipment, including heavy tanks and artillery. In many cases such option is safer and cheaper than road transport.

The current NATO policy resulting from the need to bolster the Eastern flank requires ensuring the permanent presence of multinational forces in Europe. As a result of the 2014 Wales Summit, the Alliance adopted the Readiness Action Plan which called for the creation of a Very High Readiness Joint Task Forces (VJTF) and expansion of the NATO Response Force (NRF) to increase the Alliance's response capability. At the 2016 Warsaw Summit, the Alliance took the next step in building deterrence by agreeing to deploy four multinational NATO battle groups of about 1,200 troops to each of the Baltic States and Poland through the Alliance's Enhanced Forward Presence (EFP) initiative. Approximate total troop number for all four battlegroups is 5,090. The United States has also begun rotating an Armoured Brigade Combat Team (ABCT) to Europe and prepositioning equipment for a second brigade combat team (BCT) that would deploy from the United States in a crisis (Vershbow and Breedlove, 2019).

On June 3, 2014, in Warsaw, President of the United States Barack Obama proposed the European Reassurance Initiative (ERI) to assure NATO Allies and partners of the U.S.'s commitment to the security and territorial integrity of NATO. ERI funds enable Operation Atlantic Resolve (OAR), which ensures U.S. European Command has ready a persistent rotational presence of American air, land, and sea

forces in the region as a show of support to Allies and in response to Russia's actions in the Ukraine (ERI Fact Sheet, 2020). Poland due to its geographical location plays an important role both as a transit country and Host Nation for NATO commands and military infrastructure, such as: Multinational Division North-East Headquarter in Szczecin, Armoured Brigade Combat Team (ABCT) in seven locations, Combat Aviation Brigade in Powidz, Division Headquarter (Forward) in Poznań, Missile Defence Facility in Redzikowo, Enhanced Forward Presence (EFP) multinational Battlegroup in Orzysz led by the United States or NATO Force Integration Unit in Bydgoszcz. Rising number of military exercises like DEFENDER-Europe 20, ANAKONDA, Noble Jump 19 or ABCT rotations shows the real level of the Polish Armed Forces logistics capabilities, especially in land transport. Where available, rail has played a significant role in moving equipment into the theatre of operations and remains a viable means of transportation.

## **2. Rail Infrastructure in Poland**

The railway infrastructure in Poland was shaped in the period 1918-1939, after regaining independence. The integration of three different rail networks taken over from the former invaders (Russia, Prussia, and Austria) after 123 years of partitions was a great challenge. There were different standards in railroad construction. Polish State Railways inherited from the invaders various types of rolling stock and traffic control systems. There was a shortage of plants producing and repairing locomotives and wagons.

The worst rail transport situation was in the territory of Poland annexed by Russia, which treated these lands as an area of future war with Prussia. The results of such policy are also visible today. Another problem was the reconstruction of the country's transport infrastructure, which had been destroyed during the First World War and then the Polish-Soviet War of 1920. About 50% of the existing 11,000 bridges were destroyed because of military operations, as well as half of the 2,100 steam locomotives and 75% of the 41,500 freight wagons (Janicki *et al*, 2020). Hundreds of kilometers of railways and railway sleepers have been damaged because of conversion from broad-gauge, commonly known as a Russian gauge (1520 mm), to the standard-gauge (1435 mm) dominated in Poland and vice versa. Enormous destruction of rail infrastructure took place during World War II.

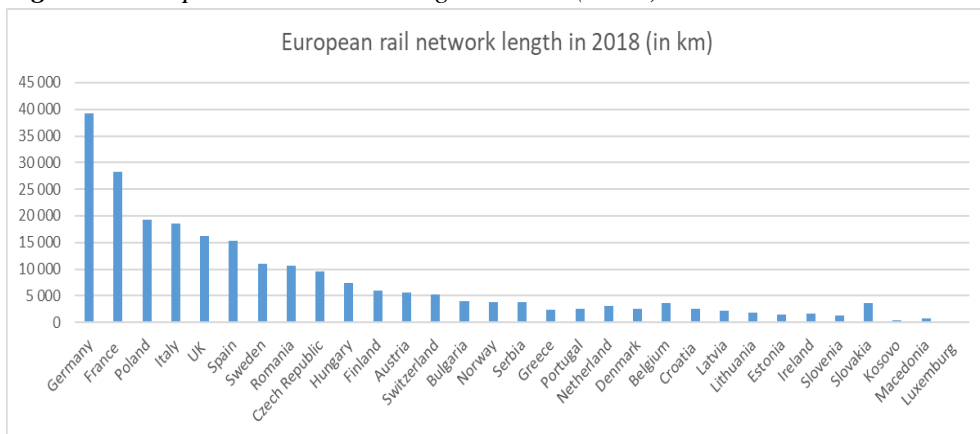
The present condition of Polish transport infrastructure and organization results from the earlier membership in the Eastern Block. The dominant role of the USSR and its military strategy led to the development of mass rail transport both in the civilian and military sector. Rail transport was the basic means of transport troops and military equipment. It is worth emphasizing that the Russian Army withdrawing from Poland in 1990-1993 needed 2,981 rail transports consisting of 22,934 railway wagons to move more than 56,000 soldiers, 7,500 personnel, 40,000 family members, 599 tanks, 952 armored fighting vehicles, 390 howitzers

and mortars, 202 aircrafts, 144 helicopters and 443,000 tons of supplies (Czulicki, 1993).

Under operational plans of the Warsaw Pact, the Polish railway network was to be used for purposes of handling military and supply delivery transports along the Western and Coastal Operational Directions. Until 1956, total militarization of the railways proceeded according to the Soviet model. In the late 1950s, once a new doctrine regarding the rear support operations in the event of a nuclear war was introduced. Preparations of the railway network for offensive front-end operation included the securing of appropriate technical infrastructure and rolling stock, all especially adapted for military purposes (Tucholski, 2020). The role of road transport was limited to auxiliary functions.

Taking into consideration the length of railway lines, Poland with Germany and France is among the leading in Europe. The total length of railway lines in the IRG-Rail-reporting countries is 234,037 km, as shown in Figure 1.

**Figure 1.** European rail network length in 2018 (in km)

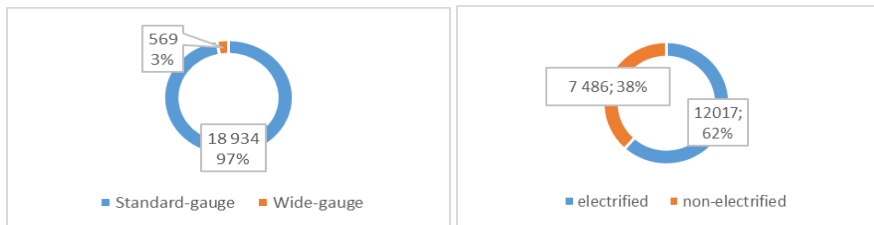


**Source:** Own elaboration based on IRG-Rail.2020.Eight Annual Market Monitoring Report, March, 5.

Another important development factor is electrification level. The only European country with fully electrified network is Switzerland. Overall, 55% of the total length of railway lines in Europe is electrified (IRG-Rail-report, 2020). The total length of electrified railway lines in Poland is 12,017 km (62%), as shown in Figure 2a. The length of the railway lines in Poland used by all infrastructure managers in 2019, including standard- and wide-gauge railways, was 19,503 km, which means an increase of 155 km in comparison to 2018 (Figure 2b). The largest infrastructure manager PKP PLK had 18 680 km active lines. This is 144 km more than in 2018. PKP PLK was the manager of 1,858 km of out of service lines. In total, the company managed 20,538 km of lines (41 km less than in 2018). The longest wide-gauge network (394,6 km) was managed by PKP LHS. The average

speed of an intermodal train in Poland is 31.7 km/h, a conventional train has an even lower average. Polish train speeds are much lower than the EU average. The main obstacles in developing intermodal transportation are inadequate number of intermodal terminals.

**Figure 2.** The structure of railway lines operated in Poland in 2019: **a)** by electrification level (in km); **b)** by track gauge (in km)



**Source:** Report on rail transport market operations 2019, Office of Rail Transport, Warsaw, p.119.

One of the most important parameters for assessing the railway potential is the availability of railway infrastructure. It depends on three factors:

- railway network density;
- railway transport points density;
- spatial structure of the railway network in each area (Wojewódzka-Król and Załoga, 2016).

The railway network density in Poland varies across regions. The best situation is in western and northern voivodships, while eastern part of the country is less developed. Average density of railway lines was 6.24 km/100 sq.km in 2019 (Report on rail transport market operations, 2019).

### 3. Rolling Stock Used for Military Transport

Rail transport, due to its large transport capacity, can be used for mass transport over long and medium distances. It is characterized by high regularity and efficiency as well as low sensitivity to weather conditions. Railways are unrivalled in their capacity to move heavy and bulky loads, over long distances at relatively high speeds. Its capacity is dependent upon factors such as loading gauges, passing facilities and the availability of motive power and rolling stock. Special loads, such as main battle tanks, will require scarce specialized rolling stock, which must be identified well in advance of the movement to allow for its positioning. During a rail move, trains may be required to switch onto differing national and regional networks which would normally have separate regulations and standards (e.g. track width, bridge and platform heights, speed limits etc). Under these circumstances, load planning must meet the most restrictive regulations, and standards, of the region, or nation, through which the train will pass. The fact that rail movement needs a permanent way, rail tracks, is in itself a limiting characteristic (AJP-4.4, 2013).

During the peacetime, the Polish Armed Forces (PAF) use rail to transport troops for exercises and supplies (ammunition, fuel). According to the the Polish Armed Forces procedures the minimum transport distance for heavy equipment loaded at military railhead by rail is 50 km. It is associated with high costs. Due to technical limitations related to the Polish railway infrastructure, the length of the military train cannot exceed 600 m. The weight of the train depends on the parameters of the railway line and is on average 1,200 tons. Average practical speed is 20-30 km/h only (DU-4.4.1B, 2014). Based on the data from Polish National Movement Coordination Centre (PLNMCC) - annually, the number of domestic military rail transports is 120-180 trains formed on 3000-4000 carriages. In international transport it is respectively from 3 to 8 trains formed on 50-160 carriages (Dobrosielski, 2018). The Army uses the following types of wagons:

- first- and second-class passenger cars (troops movement, medical evacuation, convoys);
- flatcars (vehicles, containers, oversize loads);
- tank cars (fuel, chemicals, water);
- covered cars (ammunition, medical equipment, food);
- other equipment (cranes, mobile ramps).

The rules concerning the rail transport for NATO forces are contained in the STANAG 2468 Technical aspects of the transport of military materials by railroad AMovP-4(A). Table 1 shows the total number and structure of standard gauge rolling stock registered in Poland in the years 2015-2019.

**Table 1.** *The structure of standard-gauge wagons available to freight railway in Poland in the years 2015-2019 (in thousands)*

Specification	2015	2016	2017	2018	2019
Open freight (E,F)	59,641	61,919	59,432	61,677	61,477
Covered (G,H)	4,100	3,976	3,897	2,075	2,065
Flat (K,L,R,S)	11,603	11,541	12,551	12,973	13,453
Others (T,U,Z)	15,562	14,902	15,249	14,624	14,159
<b>Total number</b>	<b>90,906</b>	<b>92,338</b>	<b>91,129</b>	<b>91,349</b>	<b>91,154</b>

*Source: Report on rail transport market operations. 2019. Office of Rail Transport.*

The percentage share of freight wagons in the rolling stock registered in Poland is 84.19%. The average age of the freight wagons was 33 years in 2019. A substantial number of freight wagons operated in Poland will have to be upgraded in the years to come (Report on rail transport market operation, 2020).

**Table 2.** Number of rolling stocks for military purpose in Poland

Type	Number in service	Purpose	Remarks
xKl /Covered G	30	troops	decommissioning in 2022
xKch/ Covered G	10	active field kitchen	decommissioning in 2022
175A3/Passenger B	8 (6+2)	troops (6)/convoys(2)	new construction- commissioning this year
Slmmps/ Flat S	80	heavy vehicles, tanks up to 60 tons (PT-91, T-72, L2A4, L2A5)	after technical modernization
Sammns/Flat S	100	heavy vehicles, tanks up to 90 tons (M1A2, Challenger 2, L2A6, L2A7, recovery vehicles)	new construction – commissioning last year

*Source: Own elaboration.*

The Army still owns limited rail infrastructure and rolling stock in such locations like seaports, airports, ammunition depots, military training areas. The shortage of passenger carriages and heavy platforms for transporting tanks or containers, as well as allied obligations resulting from performing the tasks of the HNS country require cooperation with private rail companies. An example may be the contract between the Polish Ministry of National Defence and PKP Cargo S.A. concerning domestic and international rail transport services. Individual NATO member states sign appropriate agreements with commercial rail operators guaranteeing assured access to the necessary rolling stock on request. Based on the Polish Ministry of Defence (MoD) example “Rail Transport Request” must be sent to the railway company (PKP Cargo S.A.):

- in peace time – 30 days before loading;
- in crisis time – 5 days before loading.

The armed forces are one customer among many, and they too are required to reserve wagons in advance for their needs. In Germany, for example, this typically takes 35-40 days. To ensure that rail capacity is available for short notice military movements, the allied forces in Europe have put in place a variety of arrangements with civilian rail operators. Under the “red star” programme, for example, Deutsche Bahn (DB) has agreed to make available at short notice six trains to move the VJTF. The heavy equipment of ABCT including tanks, require 17 trains to move (Hodges and Lawrence and Wojcik, 2020).

As a part of the Program of Non-military Defense Preparations (PPPO), PKP Cargo S.A. maintains 30 xKl type covered wagons xKl type for the transport of troops and 10 xKch type wagons for the transport of active field kitchens. The rolling stock is used to transport both own and allied troops as part of the Host Nation Support during numerous military exercises in Poland. According to information

from the Ministry of National Defense, due to their poor technical condition and age, they will be withdrawn from service by 2022. Old type wagons will be replaced by 8 new passenger cars, the delivery of which is scheduled for this year. The total number of wagons for the needs of the Polish Armed Forces is shown in Table 2 above.

Due to the fact that it is not possible to rent wagons for transporting heavy tanks on the civil market, the Polish Army decided to resolve this problem by purchasing from the defence budget 100 rail wagons with 90 tonne capacity last year. To illustrate the scale of the problem, Poland has approximately 700 tanks, of which 247 are L2A4 and L2A5 version. To move only one tank battalion (58 tanks) by rail, 6 rail transports are needed.

#### 4. Rail Transport During Selected Military Exercises in Poland

Analyzing the last 7 years there is a visible increase in the number of military transports by rail. Regular military exercises of NATO forces including VJTF, eFP or ABCT in Poland and Baltic States require adequate transport capabilities. Based on the data collected from the Polish National Movement Co-ordination Centre in Warsaw (PLNMCC) the number of rail transport was: 409 in 2005, 406 in 2006, 349 in 2007, 253 in 2008, 49 in 2009, 78 in 2010, 117 in 2011, 158 in 2012, 100 in 2013, 134 in 2014, 190 in 2015, 160 in 2016, 411 in 2017, 314 in 2018 and 264 in 2019, as shown in Figure 3. Adopted for the purpose of the article analysis of rail transport, concerns the period 2014-2020, however, data from earlier years were used to better illustrate the problem.

**Figure 3.** Number of military rail transports in Poland in the years 2005-2019



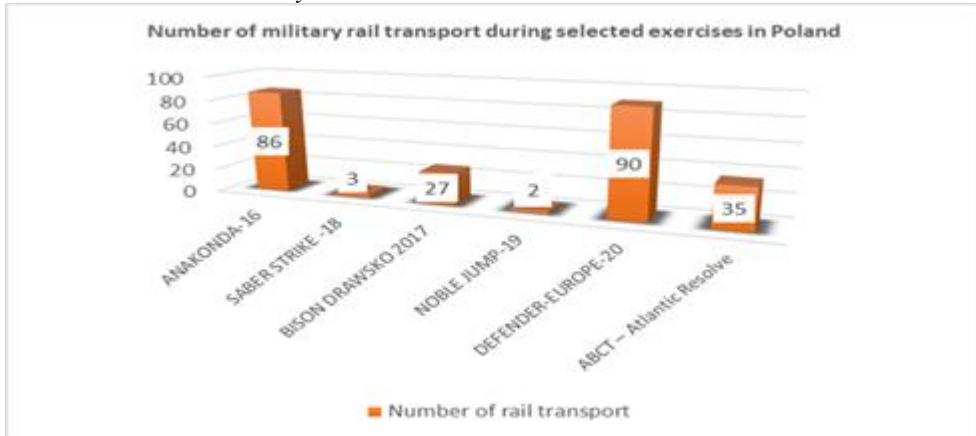
**Source:** Own elaboration based on data from PLNMCC

Observing last year due to COVID-19, the rotation and distribution of forces has been modified. U.S. units coming into the European theater require mitigation plans to include quarantine and testing before moving across the continent.



When analyzing the most important military exercises (ANAKONDA-16, NOBLE JUMP-19 or ABCT rotation) there is a noticeable increase in interest in rail transport, which is carried out by various carriers (Figure 4).

**Figure 4.** Number of military rail transports during selected military exercises in Poland in the years 2016-2020



*Source:* Own elaboration based on data from PLNMCC.

The leading carriers/operators in Europe that provide rail transport for NATO troops are PKP Cargo S.A., Deutsche Bahn Cargo, SNCF or DAMCO.

## 5. Anakonda-16

The multinational Anakonda 2016 was the largest exercise of this type organized by the Polish Army since 1989. Around 31,500 soldiers were involved in the operation, in total. The material resources involved included 3,000 vehicles, 105 aircraft and 12 naval vessels and over 7000 vehicles. The goal of the exercise was to integrate the interoperability of the national and allied commands and elements, within the framework of a collective defensive operation carried out in a hybrid warfare setting.

This Polish national exercise was held at various locations in Poland from June 7-17, 2016, and was the largest multinational exercise held prior to the Warsaw Summit. Poland has held an Anakonda exercise every two years since 2006. The aim of exercise was to develop the capability to command a joint defensive operation supported by a multinational coalition and in cooperation with civilian authorities. As far as logistics effort is concerned during the exercise Polish NMCC:

- a) processed 589 requests for 4,007 allied forces vehicles for entrance/transit through the Polish territory;
- b) processed 199 permits for movement of PAF vehicles out of the Polish territory.

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- c) granted 768 road movement permits including 367 columns movements, 313 oversized/overweight vehicles movements and 88 Dangerous Goods permits for movement:
- 345 non-escorted;
  - 152 escorted by Military Police;
  - 140 escorted by Traffic Control Companies;
  - 131 escorted by military units.
- e) directly coordinated:
- 52 airlifts with transportation of 4,049 pax i 198,8 t cargo;
  - 17 sealifts with transportation of 1,943 equipment units and 128 pax.
  - 35 own forces rail transports on 886 rail cars and 51 allied forces rail transport.

Anakonda 16 increased the demand for European railcars, and the carrier struggled to support the mission. The primary problem was a shortage of specialized cars that were required to transport oversized vehicles, such as tanks and M88 Hercules recovery vehicles (Cambrelen, 2017).

## **6. Armoured Brigade Combat Team Rotation**

Since April 2014, U.S. Army Europe and Africa has led the Department of Defense's Atlantic Resolve land efforts by rotating units based in the U.S. to Europe. Here are approximately 6,000 regionally allocated Soldiers participating in nine-month Atlantic Resolve rotations at any given time. Rotational units conduct bilateral, joint and multinational training events across more than a dozen countries. There are four types of U.S. Army Atlantic Resolve rotations – armoured (3,000 soldiers), aviation (2,000 personnel), sustainment task force and division headquarters (1,000 soldiers). Typical ABCT rotation consists of approximately 3 000 soldiers, organized in seven battalions: three combined arms, one cavalry (reconnaissance), one artillery, one engineer and one brigade support battalion.

Taking into consideration the seventh rotations of ABCT arrived in Poland in October 2020 (1st Cavalry Division from Ford Hood) it includes 60 M1A2 tanks, 120 M2A3 Bradley Fighting Vehicles, 20 M109A6 Paladin self-propelled artillery, 385 tracked vehicles, 20 M113 Armoured Personnel Carriers, 760 wheeled vehicles and trailers. As far as Aviation Brigade in concerned there is 2,000 personnel, 10 CH-47 Chinooks, 25 AH-64 Apaches, 55 UH-60 and HH-60 Black Hawks o More than 1,800 wheeled vehicles and pieces of equipment As of: Nov. 20, 2020 Armored Rotation: Another element in Sustainment Task Force comprised of nearly 1,000 personnel and 200 pieces of equipment. ERI budget at the level of around \$ 4 billion per year funds the deployment of forces with equipment to and from Europe, training, fuel, and sustainment costs while deployed (OAR Fact Sheet, 2020). Every deployment of ABCT consists of three steps:

1. **National movement** – preparation and transport within continental US from the home bases to the Sea Port Of Embarkation (SPOE – Charleston, Jacksonville, ) using land transport (rail and road). The rolling stock (flatcars, passenger wagons) for the transport of military equipment within the US was supplied and organised by the Defense Freight Railway Interchange Fleet (Frissel (ed), 2019)
2. **Strategic movement (air and sea)** – from the SPOE to the Sea Port of Debarkation (SPOD) in Europe (Belgium, Germany, Poland)
3. **Operational movement** – from the SPOD to the Final Destination (Poland, Romania, Bulgaria) using land transport (rail, road). This part is called RSOM (Reception, Staging and Onward Movement). After debarkation in sea port heavy equipment (tanks, artillery, armored fighting vehicles) is loaded onto rail cars at rail yard. Wheeled equipment is shipped by trucks in convoys. Civilian German railway carrier (DB) is the primary mover of US equipment transported by rail. The heavy equipment of ABCT including tanks, require 17 trains to move (Hodges and Lawrence and Wojcik, 2020). The total time for deployment is about 60 days.

## **7. Noble Jump-19**

The main training for NATO's Spearhead Force, the Very High Readiness Joint Task Force (VJTF) was held in Zagan (Poland). A force of 2,500 German, Dutch and Norwegian troops and 1,000 vehicles took part in an exercise led by Germany. Some 1,700 German troops and 600 vehicles and 70 tanks from bases in Germany (Munster) deployed to Oberlausitz training area near Chemnitz. The German parts of VJTF was transported via air and rail to a staging area near the Polish border. From this area Dutch and German convoys started deployment to Poland. In the same time the Norwegian force was transported via rail and ship to Szczecin (Poland). Two train transports were provided by Poland, as the Host Nation, for the Norwegian deployment from Szczecin SPOD to Leszno Górne railhead. The load consisted of 86 devices (76 vehicles plus 10 containers) and 20 drivers. The redeployment segment from Leszno Górne railhead to Szczecin SPOE, was conducted with 2 trains as well. Payment was managed under Surface Exchange of Services (SEOS) – which is a cashless system utilised for Inland Surface Transport and Sea Transport activities for a grand total of 871 SEUs (1 SEU =300 EUR). Along with planning and coordination the move was also supplemented with services such as a 50-ton crane for containers loading/offloading and lashing of equipment. (MCCE Annual Report, 2019).

## **8. Summary and Conclusions**

Rail transport plays an important role in military logistics system, especially during peacetime. During the war, it will be used for military mobilization as well as supplying troops and evacuation. The experience of recent conflicts shows that the railway network will be effectively destroyed by aviation and sabotage groups.

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Analysing the last 7 years there is a visible increase in the number of foreign forces military transports by rail in Poland.

According to the case study presented despite of all steps taken by both military commands and civilian institutions there is a still room for improvements in rail transport system optimizing. An example is the fact that the following issues are unresolved:

- the armed forces do not have a sufficient number of own rail stock to cover own needs;
- most NATO member states have rail networks that use the standard-gauge (1435 mm) but Baltic States operate broad-gauge tracks (1520 mm);
- there is a lot legal and procedural barriers to movement created by cross-border and in-country regulations, customs and taxation requirements, dangerous goods transport;

The main obstacles in transport by rail are:

- technical condition of the rail infrastructure;
- limited capacity of infrastructure (tunnels, bridges);
- technical condition of rolling stock and locomotives (age);
- war of transportation standards US vs. Europe (carrying capacity, the level of railway electrification);
- shortage of flatcars, loading points, mobile ramps during the exercises which makes transport planning difficult;
- high costs of service vs. low speed of transport especially in Eastern Europe;
- carried out repairs of railways etc;

The most important actions to improve the functioning of rail transport in NATO include:

- acquisition new heavy platforms with capacity minimum 70 tons and passenger cars;
- acquisition of new mobile ramps for heavy tanks transport with capacity minimum 90 tons (partially completed – Poland decided to purchase 35 mobile ramps in 2018-2019);
- creating more mobile loading points to cut time during loading military units especially in remot located areas;
- modernization of rail infrastructure (speed, time, quality, safety);
- further standardization and unification of transport equipment and procedures in NATO;
- establishing „Military Schengen Zone” for improvement of military movement within EU;
- EU financial initiatives „Military Mobility” for dual-use infrastructure support, like Rail Baltica, a 870-kilometer-long high-speed rail line

from Tallinn via the Baltic states to Poland, connecting the region with Western European rail networks;

- rationalization of rolling stock management among NATO members (SEOS implementation).

One of the most interesting ideas aimed at the possibility to procure wagons and to potentially outsource railway services in the most effective way is European Railway Command. The potential provider will be able to support by renting their owned railway wagons but can also provide the full support. National provider contracts will be open to other nations. This topic is currently being analyzed by the Movement Coordination Centre in Europe (MCCE) and NATO Support and Procurement Agency (NSPA). To effectively manage any future rail partnership two common options are being studied by NSPA Rail Project Group established within the Operational Logistics Support Partnership (OLSP). First of them is the establishment of a new organization with broader rights, which would cooperate with the NSPA and could act as a Rail Command and Coordination Centre (RCCC) and the second option – the Exchange of Services Formula through the SEOS Technical Agreement.

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